RERI*Summary*

Title:	**Which Factors Determine Liquidity Across US Metropolitan Office Markets?**
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The authors seek to identify the drivers of office transaction activity by US metro and liquidity risks across these markets. Given that private real estate is a relatively illiquid asset class, the variation of liquidity across office markets can affect asset selection and relative pricing.

The topic is explored using a framework for the determinants of transaction activity. Transaction activity is considered a function of individual real estate market attributes as well as economic and capital market conditions. Real estate investment performance is also a factor, although this can create a feedback loop to transaction activity as both may influence each other.

Using office transaction data from Real Capital Analytics (RCA), 49 major MSAs were selected. Measures for the number, value, square footage, and cap rate of individual office transactions from RCA were identified for each MSA. Other real estate market indicators (rents, vacancy, completions and net absorption) were collected from CBRE–Econometric Advisors (CBRE-EA). Economic (MSA/US real GDP and debt-to-GDP ratio) and capital market (Treasury yield and lending-to-deposit rate spread) data were collected from federal statistical sources.

Turnover rates, defined as the value of buildings traded annually in an MSA as a share of the MSA's total value of all office buildings, were calculated by the authors using rents per square foot and cap rates to create a proxy of total capital value in each MSA. The table on the next page lists MSAs included in the analysis along with the share of national office stock and average annual turnover rate for each.

Using the real estate and economic metrics, the authors tested for key drivers of market liquidity, with volume and turnover rate as a proxy. The drivers of office sales volume across markets reflected expected outcomes. Higher sales volume is associated with a larger local economy, greater debt availability, lower interest rates, a narrower lending-to-deposit rate spread and stronger office market conditions as measured by real rents and net absorption. The relationship between sales volume and foreign investment was positive, but less clear as it was not consistent across their research.

When using turnover rates as a proxy for liquidity, the results were less intuitive. Only the relationship with the size of the local economy (larger market supporting higher turnover) and lending-to-deposit rate spread (lower spread supporting higher turnover) met expectations. As shown in the table, there appears to be a bias toward higher turnover in smaller markets, especially in the Sunbelt.

The key takeaway for practitioners from this academic paper is a confirmation of the supports for relative liquidity across major US office markets, such as market size, favorable lending market conditions, and the local real estate cycle.

The turnover rate concept holds promise as a proxy measure for relative liquidity, but needs refinement before used as a tool to compare office markets. The measure for turnover uses values as a basis. Transaction values tend to adjust faster than appraisals at inflection points in the real estate and/or economic cycle, which could distort the share of transaction values relative to the capital

stock. This may explain the lower turnover rates in larger markets and an exploration of turnover rates based on square footage could reveal whether or not this potential distortion is significant.

The impact of foreign investment on relative office market liquidity is another concept worth pursuing in future research as the results in the paper were unclear.

MSA Summary, ranked by share of US office stock

MSA	Share of US Office Stock (2014)	Average Annual Turnover Rate (2002-2015)	MSA	Share of US Office Stock (2014)	Average Annual Turnover Rate (2002-2015)
New York	19.5%	6.3%	Orlando	0.9%	12.9%
Washington DC	9.1%	9.9%	Portland	0.9%	11.6%
Los Angeles	8.2%	11.9%	Cleveland	0.8%	5.8%
Chicago	6.0%	13.3%	Indianapolis	0.8%	9.9%
Boston	4.8%	10.2%	Sacramento	0.8%	15.3%
Dallas	4.4%	14.3%	Kansas City	0.7%	9.3%
San Francisco	4.2%	19.8%	Columbus	0.7%	8.4%
Atlanta	4.0%	11.2%	Nashville	0.7%	11.2%
Houston	3.9%	13.2%	Hartford	0.6%	4.2%
Philadelphia	3.8%	6.7%	Richmond	0.6%	6.3%
South Florida	2.1%	13.3%	Milwaukee	0.5%	9.0%
Denver	2.1%	15.1%	Jacksonville	0.5%	12.1%
Seattle	1.9%	17.6%	Norfolk	0.5%	5.3%
Minneapolis	1.5%	N/A	Salt Lake City	0.4%	16.9%
Baltimore	1.5%	7.2%	Louisville	0.4%	N/A
Phoenix	1.4%	21.5%	Memphis	0.4%	7.7%
Charlotte	1.3%	9.6%	San Antonio	0.4%	16.7%
Detroit	1.3%	7.5%	Honolulu	0.3%	9.5%
Pittsburgh	1.3%	4.0%	Las Vegas	0.3%	31.2%
San Diego	1.2%	21.0%	Tucson	0.2%	7.7%
Raleigh	1.2%	7.9%	Albany	0.2%	N/A
St. Louis	1.1%	9.1%	Oklahoma City	0.1%	21.4%
Cincinnati	1.0%	6.2%	Toledo	0.1%	N/A
Austin	1.0%	19.7%	Albuquerque	0.1%	21.2%
Tampa	0.9%	13.2%			